IN THE CLAIMS

1. A network-assisted navigation satellite receiver system, comprising:

a network server with a first navigation satellite receiver for computing accurate, absolute time;

a network client with a second navigation satellite receiver and operating according to a relative time;

an interconnecting network for communicating information related to said accurate, absolute time from the network server to the network client, and that imposes a non-deterministic time delay on messages;

a message latency testing means for determining the fastest transit times of messages from the network server to the network client (L1), and for determining the fastest transit times of return messages from the network client to the network server (L2); and

an offset calculator for computing said offset time from the average of the fastest transit times L1 and L2;

wherein, a solution at the network client by the offset calculator of said offset time added to said accurate, absolute time, provides for improved receiver initialization.

2. The system of claim 1, wherein the offset calculator provides for a solution to said offset that can be expressed as,

$$offset = \frac{T1 - T2 + \left(\frac{L1}{L2}\right)(T4 - T3)}{1 + \left(\frac{L1}{L2}\right)} \quad ,$$

where, T1 is the time a test message leaves the network server, T2 is the time that message arrives at the network

client, T3 is the time a return message leaves the network client, T4 is the time that return message arrives at the network server, L1 is T1-T2, and L2 is T4-T3.

3. A network-assisted navigation satellite receiver system, comprising:

a network server with a first navigation satellite receiver for computing accurate, absolute time, and providing for connection to a data network;

a network client with a second navigation satellite receiver and operating according to a relative time, and further providing for connection to said data network;

a message latency testing means for determining the fastest transit times of messages from the network server to the network client (L1), and for determining the fastest transit times of return messages from the network client to the network server (L2); and

an offset calculator for computing said offset time from the average of the fastest transit times L1 and L2;

wherein, a solution at the network client by the offset calculator of said offset time added to said accurate, absolute time, provides for improved receiver initialization.

4. A method for fast initialization of a navigation satellite receiver, the method comprising the steps of:

locking onto and tracking a first constellation of navigation satellites with a first navigation satellite receiver;

obtaining absolute time with said first navigation satellite receiver;

providing a server on a network for transmitting said absolute time from said first navigation satellite receiver;

connecting as a client to said network;

testing a path delay of said network between said server and said client to determine an offset time of said client from said server;

obtaining at said client a report of said absolute time over said network;

initializing a second navigation satellite receiver located at said client with said report of said absolute time and said offset time such that it may find and lock onto a second constellation of navigation satellites;

wherein, said second navigation satellite receiver is initialized more rapidly with a priori time information.

5. The method of claim 4, further comprising the step of:

charging a fee to a user of said client for providing said a priori time information.

6. A method for determining a path delay between a client and a server on a network, the method comprising the steps of:

sending a first message (L1) from a server to a client at a time T1;

receiving said first message (L1) at said client at a time T2;

sending a second message (L2) from said client back to said server at a time T3;

receiving said second message (L2) at said server at a time T4;

repeating the sending of said first and second messages;

selecting a fastest transit time of each of said first and second messages; and

estimating a network path delay from only those transit times chosen in the step of selecting.

7. The method of claim 6, further comprising the steps of:

clocking absolute time at said server;

keeping relative time at said client; and

computing an offset of said relative time from said absolute time from information obtained in the step of estimating.

8. The method of claim 7, further comprising the steps of:

initializing a navigation satellite receiver with time information obtained in the step of computing.

9. The method of claim 7, further comprising the steps of:

accelerating an initialization of a navigation satellite receiver with time information obtained in the step of computing.

10. The method of claim 7, further comprising the steps of:

charging a user fee for any absolute-plus-offset time information obtained in the step of computing.